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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,669	09/30/2003	Mario Elmen Tremblay	8598MR	5011

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EXAMINER

ZHENG, LOIS L

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 02/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/674,669

Applicant(s)

TREMBLAY ET AL.

Examiner

Lois Zheng

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>27 May 2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Claims

1. Claims 1-14 are currently under examination.

Means-Plus-Function Language

2. Instant claims 1 and 9 contain the flowing terms written in means-plus-function format, and have been interpreted as follows:

"means for passing the aqueous feed solution into the chamber" (claims 1 and 9) is in proper means-plus-function format and is defined as a pump, or an arrangement where gravity or pressure forces aqueous feed solution from a storage container into the cell(page 17 lines 16-18 of the present specification).

"means for delivering the aqueous effluent into contact with a halogen dioxide depletion target" (claim 9) is in proper means-plus-function format and is defined as a feed means or a pump or gravity/pressure arrangement(page 17 lines 18-20 of the present specification).

"means for returning the depleted effluent" (claim 9) is in proper means-plus-function format and is defined as a re-circulation line, or a collection tank with a means for recycling the depleted effluent back to the source(page 17 lines 21-26 of the present specification).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Kelley US 6,306,281 B1(Kelley).

Kelley teaches an electrolytic apparatus for the generation of chlorine dioxide(abstract). The apparatus comprises an aqueous sodium chlorite feed solution(col. 2 lines 55-61), a non-membrane electrolysis cell comprising an anode, a cathode, an inlet, an outlet(Fig. 1) and a power source connected to the anode and the cathode(col. 3 lines 18-21).

Regarding claim 1, the inlet, the gap between the anode and the cathode of Kelley and the outlet read on the claimed means for passing the feed solution into the chamber and along a passage adjacent to the anode and out of the outlet. The claimed electric current supply is inherently present since Kelley teaches a power source connecting the anode and the cathode. The current supply provided by the power source of Kelly is inherently capable of flowing a current through the feed solution in the passage, converting a portion of sodium chlorite to chlorine dioxide, and thereby forming an aqueous effluent comprising chlorine dioxide as claimed.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kelley in view of Spence US 4,414,070(Spence).

The teachings of Kelley are discussed in paragraph 4 above. However, Kelley does not explicitly teach the claimed gap between the anode and the cathode.

Spence teaches that the efficiency of electrolytic cells is dependent upon the anode-cathode distance, and that as the distance decreases the efficiency increases(col. 1, lines 24-29).

Therefore, it would have been obvious to one of ordinary skill in the art to have routinely optimized the gap between the anode and the cathode to achieve a minimized spacing, such as 0.5 mm or less as claimed in order to improve cell efficiency as taught by Spence.

7. Claims 3-5 and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kelley in view of Kaczur et al. US 5,106,465(Kaczur).

The teachings of Kelley are discussed in paragraph 4 above. Kelley further teaches the use of a dimensionally stable platinum coated titanium anode(col. 3 lines 13-18).

However, Kelley does not explicitly teach that the metal anode is porous.

Kaczur also teaches an electrolytic cell for the generation of chlorine dioxide (abstract). Kaczur further teaches the use of a porous platinum coated titanium anode(col. 4 lines 41-63).

Regarding claim 3, it would have been obvious to one of ordinary skill in the art to have incorporated the porous platinum coated titanium anode of Kaczur into the

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electrolytic apparatus of Kelley in order to utilize the high surface contact area due to the porosity of the anode and achieve high corrosion resistance as taught by Kaczur(col. 4 lines 44-45 and 57-60).

Regarding claims 4-5 and 7-8, Kazcur further teaches that chlorine dioxide is widely used as a disinfectant in water treatment/purification(col. 1 lines 16-19). Therefore, it would have been obvious to one of ordinary skill in the art to have established an interface between the chlorine dioxide generator of Kelley and any appliances that requires water disinfecting and purification, such as the claimed water purifier, water fountains, refrigerators, etc. in order to effectively purify water as taught by Kazcur before consumption. In addition, the connection between the electrolytic cell and the water inlet of the appliance and the water/ice dispensing device of the appliance would have inherently been present in the apparatus of Kelley in view of Kazcur in order to purify untreated water into the appliance and convert it into purified water being dispensed for consumption.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kelley in view of Kaczur and further in view of DE'407.

The teachings of Kelley and of Kaczur are discussed in paragraphs 4 and 7 above. However, Kelley in view of Kaczur does not explicitly teach that the halogen dioxide generator is interfaced with an appliance via a connection of water inlet line to the inlet of the electrolytic cell and an connection of an outlet line from the outlet of the electrolysis cell to the inlet of the appliance.

DE'407 teaches an electrolytic apparatus for continuously treating/purifying water via electrolysis of chlorine dioxide from sodium chlorite(page 4 paragraph 0016, pages5-6 paragraph 0021).

Therefore, it would have been obvious to one of ordinary skill in the art to have incorporated the continuous water treatment of DE'407 into the apparatus of Kelley in view of Kaczur in order to achieve simple handling, safe production and reduced cost as taught by DE'407(page 4 paragraph 0016).

Regarding claim 6, the feed line as taught by Kelley in view of Kaczur and DE'407 reads on the claimed connection of a water inlet line. In addition, it would have been obvious to one of ordinary skill in the art to have added the claimed connection from the outlet of the electrolytic cell to the inlet of an appliance as claimed in order to allow the consumption of purified water in various appliances.

9. Claims 9-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kelley in view of Cowley et al. US 5,965,004(Cowley) and further in view of DE 100 17 407 A1 (DE'407).

The teachings of Kelley are discussed in paragraph 4 above. However, Kelley does not explicitly teach the claimed means for delivering the aqueous effluent into contact with a halogen dioxide depletion target and the means for returning the depleted effluent back to the source.

Cowley teaches an electrolytic cell for generating chlorine dioxide(abstract). Cowley further teaches that sodium chlorite from the feed tank enters an electrolytic cell to produce chlorine dioxide(Fig. 1 numeral 14). The generated chlorine dioxide is fed

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into a gas membrane cell to be brought in contact with untreated water(Fig. 1 numeral 30). The purified water is then withdrawn from the gas membrane cell(Fig. 1 numeral 40) and the remaining processing fluid is reverted back to the feed tank containing sodium chlorite solution.

Therefore, it would have been obvious to one of ordinary skill in the art to have incorporated the recirculation setup of Cowley into the electrolytic cell of Kelley in order to achieve a highly efficient, continuous and effluent free operation as taught by Cowley(col. 1 line 62 – col. 2 line 2). The transfer lines 28 and 42 as shown in Fig. 1 of Cowley reads on the claimed means for delivering the aqueous effluent into contact with a halogen dioxide depletion target and the means for returning the depleted effluent back to the source as recited in claim 9.

DE'407 teaches that chlorine dioxide is reduced to chlorite when treating water (page 6 paragraph 0021). Therefore, one of ordinary skill in the art would have found the claimed reversion to halogen dioxide salt(i.e. chlorine dioxide salt) from halogen dioxide(i.e. chlorine dioxide) inherently taking place when the electrolytic apparatus of Kelley in view of Cowley is in use in light of the teachings of DE'407.

Regarding claims 10-11 and 13-14, Cowley further teaches that chlorine dioxide can be used for water purification(col. 1 lines 11-14). Therefore, it would have been obvious to one of ordinary skill in the art to have established an interface between the chlorine dioxide generator of Kelley in view of Cowley and DE'407 and any appliances that requires water disinfecting and purification, such as the claimed water purifier, water fountains, refrigerators, etc. in order to effectively purify water as taught by

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Cowley before consumption. In addition, the claimed connection between the electrolytic cell and the water inlet of the appliance and the water/ice dispensing device of the appliance would have inherently been present in the apparatus of Kelley in view of Cowley and DE'407 in order to purify untreated water into the appliance and convert it into purified water being dispensed for consumption.

Regarding claim 12, the instant claim is rejected for the same reason as stated in the rejection ground of instant claim 6 above.

Double Patenting

10. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

11. Claims 1-3 and 9 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 15-18 of copending Application No. 09/947,846. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated

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by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

13. Claims 1-5 are provisionally rejected on the ground of nonstatutory double patenting over claims 1, 26-29, 32, 57-60, 63, and 87-91 of copending Application No. 10/027667. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows: Claims 1, 26-29, 32, 57-60, 63, and 87-91 of copending Application No. 10/027667 teaches an electrolytic apparatus that is structurally the same as that of the instant invention.

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

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14. Claims 6-8 and 12-14 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 26-31, 32, 57-62, 63, and 87-93 of copending Application No. 10/027667 in view of DE'407. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1, 26-31, 32, 57-62, 63, and 87-93 of copending Application No. 10/027667 teaches an electrolytic apparatus that is structurally similar to that of the instant invention.

However, 10/027667 does not explicitly teach the connection between the electrolytic cell and the appliance.

The teachings of DE'407 are discussed in paragraph 8 above.

Since claims 29-31, 60-62 and 91-93 of 10/027667 teaches that the apparatus is adapted to be used in appliances such as water purification devices, refrigerator, etc., it would have been obvious to have incorporated continuous water treatment of DE'407 into the apparatus of 10/027667 in order to achieve simple handling, safe production and reduced cost as taught by DE'407. The connection of between the electrolysis cell and an appliance's water inlet and water/ice dispensing device would have been inherent in light of the teachings of 10/027667 in view of DE'407.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lois Zheng whose telephone number is (571) 272-1248. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LLZ

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TECHNOLOGY CENTER 1742